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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,332	05/31/2006	Wolfgang Warnke	06055599	6243
34431 7590 01/10/2008 HANLEY, FLIGHT & ZIMMERMAN, LLC 150 S. WACKER DRIVE SUITE 2100 CHICAGO, IL 60606			EXAMINER NGUYEN, HANH N	
			ART UNIT 2834	PAPER NUMBER
			MAIL DATE 01/10/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/581,332

Applicant(s)

WARNKE, WOLFGANG

Examiner

Nguyen N. Hanh

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Remarks*

1. In view of amendments, the Examiner withdraws the objections to the drawings.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Inukai et al (US 2002/0180300).

Regarding claim 1, Inukai et al. disclose a fuel pump (paragraph 0009, lines 3-4) comprising an electromotive drive that has a commutator and carbon brushes (paragraph 0011, lines 11-12) which brush alternately against commutator segments as the commutator rotates, characterized in that the commutator segments (10) contain graphite (paragraph 0049 discloses segment 10 comprises carbon and graphite is a polymorph of the element carbon) and at least one commutator segment (10) contains graphite and an admixture of a material (paragraph 0058 discloses segment 10 comprises graphite and admixture of tin powder) that has a greater hardness than graphite (<http://www.ga.gov.au/education/minerals/glossary.html>, page 8 and <http://invsee.asu.edu/nmodules/Carbonmod/hardness.html>, page 1), wherein products of corrosion on running surfaces of the carbon brushes are increased abrasively wearable by the material of greater hardness (it is inherent that the surface of the

carbon brush is increased abrasively wearable when it is against a rotatably commutator segment made with harder material).

Regarding claim 2, Inukai et al. also disclose a fuel pump characterized in that the admixture material (tin powder) occurs in the form of individual particles in the graphite.

Regarding claim 3, Inukai et al. also disclose a fuel pump characterized in that the particles (tin) are uniformly dispersed in the respective commutator segments (10 in Fig. 2).

Regarding claim 6, Inukai et al. also disclose a fuel pump characterized in that the commutator segments (10 in Fig. 2) are oriented radially in relation to the commutator axis and that the carbon brushes bear axially against the commutator segments (inherent).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4, 5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inukai et al. in view of Sadatoshi (Patent Abstract of Japan 03226447, provided by the Applicant).

Regarding claim 4, Inukai et al. show all limitations of the claimed invention except showing the fuel pump characterized in that the admixture material is aluminum oxide.

However, Sadatoshi discloses a commutator for fuel pump characterized in that the admixture material is aluminum oxide ( $\text{Al}_2\text{O}_3$  as described in the Abstract) for the purpose of reducing amount of abrasion.

Since Inukai et al. and Sadatoshi are in the same field of endeavor, the purpose disclosed by Sadatoshi would have been recognized in the pertinent art of Inukai et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Inukai et al. by using aluminum oxide as the admixture material as taught by Sadatoshi for the purpose of reducing amount of abrasion.

Regarding claim 5, Sadatoshi also show fuel pump characterized in that the proportion of admixture material ( $\text{Al}_2\text{O}_3$ ) in the commutator is approximately 0.2% (more than .1%).

Regarding claim 8, Inukai et al. also disclose a fuel pump characterized in that all commutator segments (10) coming into contact with the carbon brushes contain the admixture material (tin).

Regarding claim 10, Inukai et al. also disclose a fuel pump characterized in that

all commutator segments (10) coming into contact with the carbon brushes contain the admixture material (please refer to the rejection of claim 1).

4. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inukai et al. in view of Sadatoshi (Patent Abstract of Japan 03226447, provided by the Applicant) and further in view of Hideyuki (Patent Abstract of Japan 02114835, provided by the Applicant).

Regarding claims 7 and 9, Inukai et al. and Sadatoshi show all limitations of the claimed invention except showing the fuel pump characterized in that the commutator segments are oriented axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments.

However, Hideyuki discloses a commutator for fuel pump characterized in that the commutator segments are oriented axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments (Fig. 1) for the purpose of reducing corrosion.

Since Inukai et al., Sadatoshi and Hideyuki are in the same field of endeavor, the purpose disclosed by Hideyuki would have been recognized in the pertinent art of Inukai et al. and Sadatoshi.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Inukai et al. and Sadatoshi by forming the commutator segments axially in relation to the commutator axis and that the carbon

brushes bear radially against the commutator segments as taught by Hideyuki for the purpose of reducing corrosion.

### ***Response to Arguments***

5. Applicant's arguments filed on 10/31/2007 have been fully considered but they are not persuasive. The applicant's argument is on the ground that the reference the Examiner relies on, Inukai et al., fails to show commutator segments which are able to clean the sliding surfaces of the brushes from oxide layers formation. The Examiner respectfully disagrees with the Applicant because lines 18-19 of the specification of the present invention disclose "the admixture of a harder material is particularly advantageous in achieving a cleaning of the carbon brushes bearing against the carbon segments during operation of the fuel pump". It is noted that there is no difference between the structure of Inukai et al and the structure of the present invention. Both the commutator segments of Inukai et al. and the commutator segments of the present invention are used in a fuel pump and comprise an admixture of a harder material. Therefore, it is inherent that the commutator segment of Inukai et al. are able to clean the sliding surfaces of the brushes from oxide layers formation. For the reasons explained above, the rejection is still deemed proper.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

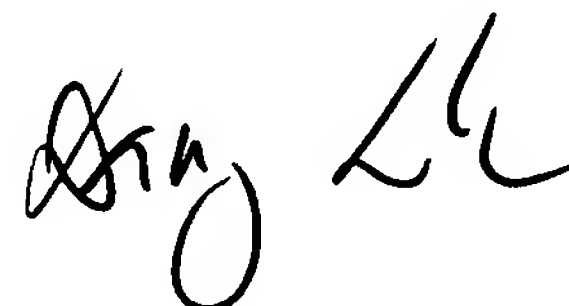
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1000.

HNN

January 3, 2008

DANGLE  
PRIMARY EXAMINER





Approved by Examiner  
HNN

1/3/09

FIG 1

